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ABSTRACT

In order to contribute to the sparse literature on factors associated with crime in rural communities, an exploratory study analyzed the relation between demographic, social, and economic factors of selected rural townships in Ohio and their rates of crime. Data for the study were collected from three sources: daily offense reports from nine Ohio sheriffs for a 6-month period of 1974, a field survey conducted in the summer of 1974, and 1970 census data. The crime rate (the dependent variable) was measured by the weighted number of offenses known to police from June through November 1974. The independent variables were selected community characteristics. The regression result showed that six variables were significantly related to variations of the crime rate; these were population changes, marriage instability, education, poverty, crime prevention efforts, and community satisfaction. However, the predictability of these variables to the crime rate was relatively low. Marriage instability had a positive effect on crime rate, while education had a negative effect on crime rate, a finding which was consistent with most urban studies. Unexpected results were obtained from some variables. The positive correlation between preventive efforts and crime rate, and negative correlation between poverty and crime rate were contrary to findings from some urban studies. (Author/BRR)

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AN ECOLOGICAL STUDY OF CRIME IN RURAL OHIO [1974]

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ABSTRACT

Comparatively little is known about the factors associated with crime in rural communities. Previous researches regarding the ecological issue of crime have been mainly conducted in urban areas. This exploratory study examined the ecological correlates of differential community crime levels in rural Ohio. Specifically, the study analyzed the relation between the demographic, social and economic factors of selected rural townships in Ohio and their rates of crime. Data for the study were collected from three sources. One source was daily offense reports from nine Ohio sheriffs for a six month period. The other two sources of data were a field survey conducted in the summer of 1974 and 1970 census data. The crime rate which was the dependent variable was measured by the weighted number of offenses known to the police from June through November 1974. The independent variables were selectec community characteristics. The regression result shows that six variables are significantly related to the variations of the crime rate in the rural Ohio area. These are population changes, marriage instability, education, poverty, crime prevention efforts and community satisfaction. However, the predictability of these variables to the crime rate is relatively low. Marriage instability has a positive effect on crime rate, while education has a negative effect on crime rate. This finding is consistent with most urban studies. Unexpected results were obtained from some of the variables. The positive correlation between preventive efforts and crime rate, and negative correlation between poverty and crime rate are contrary to findings from some urban studies.

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One of the most striking facts about crime is the consistent fashion in which the rates of crime vary from one area to another. This suggests that any study of criminal behavior should take into account the character of the community in which the behavior arises. Microscopic studies of crime and delinquency in the United States cities, particularly ecological studies, have suggested a close association between community characteristics and crime rates.

Previous researches regarding the issue of crime were conducted mainly in urban areas. This exploratory study will examine the ecological correlate of differential community crime levels of rural Ohio. Specifically, the study analyzes the relation between the demographic, social and economic data of selected rural townships in Ohio and the rates of crime. Its objective is to contribute to an understanding of the variation in crime rates in different rural areas and of the factors associated with crime rates at the community level.

Ecological Studies of Crime and Delinquency

The first major sociological study of the ecology of criminality in the United States started in Chicago in 1921. This analysis of the delinquency areas of Chicago by Clifford Shaw and Henry McKay was represented for the first most systematic researches on the description and understanding of the spatial distribution of juvenile delinquency and crime. Shaw and McKay found that official rates (juvenile court referrals) varied widely in areas of Chicago and elsewhere. The highest rates were in neighborhoods of rapid population change, poor housing, poverty, tuberculosis, adult crime and mental disorders (Shaw and McKay; 1942). They regarded all of these correlates of delinquency as reflections of an underlying state of social disorganization (Gibbons; 1970:103).

In Shaw and McKay's second ecological study, they demonstrated that the characteristic patterns for delinquency rates in Chicago could also be found in Philadelphia, Richmond, Cleveland, Birmingham, Denver and Seattle. Shaw and McKay's studies set off a wave of other studies using different techniques, and different measures.

A much more intensive and detailed study of the distribution of different delinquency rates to the different urban areas was done in Baltimore by Bernard Lander (Lander; 1956). Lander's study was the pioneer investigation of ecological interrelationships. He computed delinquency rates for census tracts in Baltimore, using official court cases for the period of 1939-1942. He also employed seven census tract variables as indicators of the ecological structure of neighborhoods. These variables were education, monthly rent, owner-occupied dwellings, foreign-born, nonwhite, overcrowding and substandard housing. Based on multivariate analysis of these ecological data, Lander found that juvenile delinquency rates were strongly associated with all seven variables.

Lander's study provoked a variety of other studies which attempted to replicate it. One of these was by Bordua's study employing data for Detroit, which involved court cases of delinquency between 1948 and 1952 (Bordua; 1958). Bordua's study generally confirmed Lander's findings though the empirical results were not exactly identical. For instance, Lander had found a curvilinear relationship of percent nonwhite population and the delinquency rate, Bordua did not find this result in Detroit.

Roland Chilton conducted another replication, comparing delinquency rate in Indianapolis with those in Baltimore and Detroit (Chilton; 1964). Chilton incorporated both Lander's and Bordua's data into an almost total replication, adding data for Indianapolis. In addition to Lander's and Bordua's seven independent variables, Chilton selected two additional variables: correlated individuals and income. Chilton found that the simple

correlations among these three cities were substantially similar. He also found that although owner-occupied dwelling was an important and statistically significant predictor in all three studies, it had less relative weight in the Indianapolis results.

Another replication of Lander's study using the framework of social area analysis was done by Kenneth Polk in San Diego, California. The research was ecological in nature and the basic units of analysis were 91 census tracts in San Diego. Polk found that delinquency rates were correlated with census tract scores on the three status dimensions of Shevky-Bell social area analysis. (Polk; 1957-58). There were also several ecological studies of crime and delinquency, such as Rosen and Turner's study in Philadelphia in 1960 (Rosen and Turner; 1967); Schmid's investigation of urban crime rate in Seattle (Schmid; 1960); Quinney's research in Lexington, Kentucky (Quinney; 1964) and many others (Bloom, 1966; Cartwright et al., 1966; Gorden, 1970; Greenwood, 1956; Hayner, 1946; Hirochi et al., 1967; Lind, 1930; MacColey et al., 1958; Moses, 1947; Reiss, 1961; Schannon, 1964; Slatin, 1969; Turner, 1969; White, 1962; Willie, 1967 and etc.).

The most frequent findings from the previous ecological studies of crime and delinquency was that offenses and offenders tend to be concentrated in areas characterized by low income, physical deterioration, broken homes and racial-ethnic concentrations which appeared to produce low neighborhood cohesion and low integration of the communities. The fact that correlations of different factors and delinquency on crime rates in separate cities did not entirely agree probably meant that there were variations in community and social influences upon law breaking in cities of different sizes, economic structures and regional locations.

Hypotheses

In view of the foregoing discussion, the design of this study involves a preliminary

theoretical framework that in essence says that the differential crime rate in various rural communities can be explained by dissimilar social and community characteristics.

Investigations in the United States revealed that crime and delinquency rates vary spatially in different sections of any given city, as mentioned previously. Some researchers further reported that the crime and delinquency rates were correlated with some community characteristics, such as low income, home ownership, percentage nonwhite, overcrowding and community integration, etc. In this research, economic, demographic and social factors are chosen to investigate their correlations with crime rate at community level. The first major proposition of the study is: the varied crime rates associate with the differing community characteristics; such as population structure, distance to the nearest metropolitan center, occupation, residential mobility, socio-economic status, and educational attainment. These demographic characteristics influence the likelihood of an individual being a criminal or being regarded as a criminal. These characteristics affect the type of crime the offender is likely to perpetrate (Johnson; 1968:39). Characteristics chosen above are different from those used in urban studies because of the difference between rural and urban areas. For example, race and overcrowding are important variables in urban crime studies while they are excluded in this study because of the small number of nonwhites in rural Ohio and the low density of population.

In addition to the ecological factors, (socio-economic and demographic status), there are also some social factors which are likely to have indirect influence on the extent of crime in different areas. These factors include community integration, crime prevention efforts or activities, residents cooperation with local police, and perception of safety. Community integration means the sense of belonging of its residents and the relationship

among the members of the community. Crime prevention efforts include both police and residents' activities such as locking up houses and automobiles. Residents' cooperation with local police implies the percentage of actual criminal cases that are reported to the police. Perception of safety is the residents' feeling about the safety in their community. These factors might be interrelated and it is difficult to clearly identify which ones are the causes of higher crime rates of the area or which ones are the results. However, their correlations to the crime rate had been studied by some researchers. MacCoby, Johnson and Church noted that in disorganized neighborhoods, delinquency rates were high due to the lack of community integration (1958). It is found that residents of the high delinquency rate area, as compared with residents of the low delinquency area, did not like their neighborhood as well, did not know their neighbors as well, and did not so often feel that they shared interests and points of view with their neighbors.

Few studies have investigated the correlation between crime rate and the measure of crime prevention that the area residents had had or the degree of residential cooperation with police in reporting and investigating crimes. It is possible that the crime might persist, because the victim did not report the incident to police. The relationship of residents and the local law enforcement might also be correlated with an area's crime rate.

A tentative hypothesis is derived based upon these assumptions: The crime rate is correlated with the integration of a community. Residents of a higher crime rate area are more likely to have less integration, less satisfaction toward their community, less efforts of crime prevention and less cooperation with the law enforcement.

Unit of Study

Townships in 9 Ohio counties with rural population are used as the unit of analysis.

The counties were selected by choosing three counties in a cluster in each of three areas of Ohio: the appalachian counties (Athens, Hocking and Perry); the combelt counties (Clark, Fayette and Madison); and rural counties adjacent to a metropolitan center (Ashland, Medina and Wayne).

According to Bell and Newby, some or all of the following might be included in the conception of the community: (1) people, (2) a territorial base, (3) functional interdependency of specialized parts, (4) a common culture and social system which integrate activity, (5) a consciousness of unity or belonging and (6) an ability to act in a corporate fashion (Bell and Newby; 1972). The township is viewed as a community for the purpose of this study. Townships are relatively small in population size and geographic area. People residing in a limited geographic area tend to have feelings of unity and interdependency.

Sources of Data

The present study is based upon data collected from the following three sources:

1) Sheriffs' Reports:

Six months of daily reports of offenses provided by the sheriffs of the 9 selected counties.

These nine counties were selected on a stratified nonrandom basis. They encompassed Appalachia, Combelt and Northeast Industrial areas of Ohio -- three counties in each of the areas. The counties selected in each area are adjacent to each other so that patterns extending across county lines might be explained. The counties selected were: Appalachia - Athens, Hocking and Perry; Combelt - Clark, Fayette and Madison; Industrial Northeast - Ashland, Medina and Wayne. Sheriffs in these 9 selected counties kept daily records

of all offenses reported for the period June 1, 1974 through November 30, 1974. The report form which all sheriffs utilized is shown in Appendix III.

2) Field Interviews:

Data was also collected from a field survey in the selected 9 counties in the summer of 1974. The sample population for these 9 counties was chosen by, first, randomly drawing ten townships from all the townships in each of the nine counties. Then, ten families were selected in each sample township by the following methods: (1) An intersection of two roads was arbitrarily picked from a map to be the starting point for a continuous type sample; (2) An interviewer started at the arbitrarily-picked intersection and then chose a direction to proceed until ten household interviews were completed. To pick up additional interviews, three additional townships were selected in Clark, two in Wayne and one in Medina. Totally, 889 questionnaires were completed by either a personal interview or a drop-off questionnaire.

3) Census Data of 1970:

Census data based on township level are obtained from 1970 census provided by the data base of the polimetric laboratory, the Ohio State University.

Variables of Study

In order to test the effect of various factors on the crime rate of local communities, several variables are utilized in the study. The dependent variable is the crime rate of the community. The independent variables are demographic, socio-economic status of the community and attitudinal aspects of the community's residents. These variables considered

are listed and defined in the following sections.

Crime Rate

Incidents of crime in the 9 rural Ohio counties are provided from daily sheriffs' logs kept for this study. The information will indicate the frequency and type of crimes reported or detected in every township. Therefore, they will provide the basis for comparison of townships and estimating the different rates of criminal activity in these areas. Crime rates in the various areas are measured by the number of offenses known to the police. Reports of the sheriffs' logs from June through November, 1974 will be tabulated and distributed into townships according to the location of offense. The time period over which the crime rate is computed might seem to be short. However, of fundamental interest here is the variation among rates for different townships, rather than the magnitude and the volume of the rate for particular areas.

A crime rate generated by simply summing up the frequencies of all types of offenses can not reflect the actual seriousness of the community's crime behavior. Therefore, a weighted crime index is desirable for each of the townships under study. In the Uniform Crime Reports published by the Federal Bureau of Investigation, offenses are divided into two groups according to their seriousness: namely, Part I and Part II offenses. Part I offenses are more serious offenses, which include criminal homocide, forcible rape, robbery, aggravated assault, burglary, larceny and auto theft. Part II offenses include those of less seriousness than the above mentioned ones. Assaults other than aggravated ones, arson, forgery, vandalism, and other minor offenses are included in the Part II offenses (Uniform Crime Reports, 1972:58-59). In order to generate a weighted crime index, it is felt that further divisions of offenses are needed for the study. The offenses in Part I

and Part II are therefore further divided into two groups, respectively. Part I is divided into category A and B, and Part II into category C and D. Category A includes the most serious offenses which usually threaten the lives of the victims or at least cause serious irreversible physical harms to the victims: criminal homocide, forcible rape, robbery and aggravated assault are of this nature. Category B includes the rest of the Part I offenses which cause considerable property damage of the victims: burglary, larceny and auto theft are included. In the Part II offenses, those that involve personal and/or property damage to some degrees are grouped as category C. They are other assaults, arson, forgery and counterfeiting, fraud, embezzlement and so on. The rest of the Part II offenses are then grouped into category D which includes nothing more serious than juvenile runaway, criminal tresspass, illegal sale and use of fireworks, dumping, refuse unlawfully desposed, etc. (More detailed descriptions of these four categories of offenses are given in the Appendix II). These four categories are then assigned with weights 4, 3, 2, and 1 to compute the weighted crime index of a township, which can be shown by the following formula:

$$\text{Weighted Crime Index} = \frac{4F_a + 3F_b + 2F_c + F_d}{\text{Total population size of the township}} \times 100$$

where F_a, F_b, F_c and F_d are frequencies of category A, B, C, and D offenses, respectively. The population figures used in computing all of the rates are taken from the 1970 census. Since there have probably been some population changes from 1970 to 1974, these rates can only be regarded as approximate. Usually, the regional crime rates based upon each 100,000 persons in the population, rather than 100. Since the unit for analysis in this study is a relatively small population in size, it is more appropriate to use per 100 persons in calculating the crime rate.

There are 16 independent variables used in the study. Sources of data are from U.S.

Census and a field survey. Demographic and socio-economic variables, such as age, sex, percent farm occupation, percent broken homes, population size, education, income, poverty and unemployment rate are derived from 1970 U.S. Census. Several social or attitudinal variables are obtained from a field survey conducted in the summer of 1974. A stratified random sample of 889 rural Ohioans out of the nine counties were interviewed. The questions covered the respondents attitude toward safety of his community, the degree of the respondent's integration in the community, and report of crime incidents.

The demographic and socioeconomic variables are listed and operationalized in the following:

1) Population size: 1970 population of each township

2) Percent population change:

$$\frac{\text{1970 population - 1960 population}}{\text{1960 population}}$$

3) Percent of male population:

$$\frac{\text{Number of males}}{\text{Total population}} \times 100$$

4) Youth population: Percent of population 14 to 24 years old

5) Education: Median school years completed of persons 25 years old and over

6) Median income of the township

7) Poverty level: Percent of families in which family income is less than $3,000 per year

8) Percent of farm occupation:

$$\frac{\text{Number of farmers, farm managers, farm laborers, foremen and upaid family workers}}{\text{Employed persons 16 years old and over}} \times 100$$

9) Percent of unstable marriages:

$$\frac{\text{Divorced + Separated persons}}{\text{Persons 14 years and older}} \times 100$$

10) Unemployment rate: Percent of unemployed persons among persons 16 years and older in the labor force

11) Distance to a metropolitan center: Miles from the center of the township to the center of the nearest metropolitan area.

Five attitudinal indices are derived from the result of the field survey conducted in the summer of 1974. They are residents' perception of safety, crime prevention, neighborhood integration, community satisfaction, and cooperation with police. Perception of safety measures the residents' feeling of safety in the community. Crime prevention efforts include residents' activities of cautions and preventions. Neighborhood integration measures the relationships among the members of the community. Community satisfactions measures the general satisfaction of the residents to their community services. Residents cooperation with local police implies the degree of actual criminal cases that are reported to the police.

One of the most important methodological contributions to attitude scale construction is the "technique of summated ratings," or the "Likert technique." In this technique, a series of propositions expressive of a wide range of attitudes from extremely positive to extremely negative and concerning a particular question are compiled and carefully edited. In selecting the statements, emphasis is placed on values rather than on facts. Moreover, the statements are so constructed as to indicate clearly a position for or against the point at issue. Each proposition usually calls for a response by checking or underlining one of five words such as "strongly approve," "approve," "undecided," "disapprove," "strongly disapprove." Frequently the expressions "almost always," "frequently," "occasionally," "rarely," almost never" may be applicable for certain purposes. Although a five-point continuum is most common, a three, four or six-point continuum is occasionally used. In the five-point continuum, for example, weights of 1, 2, 3, 4, 5, or 5, 4, 3, 2, and 1

are assigned in proper order to the several expressions, the direction of weighting being determined by the favorableness or unfavorableness of the statement (Young; 1956:334).

Within the framework of the above described technique, five indices mentioned previously are derived in this study. Since the interest is in the aggregated township level rather than in the individual respondents, an index of a township is the average sum of weighted answers of the respondents in that township. For example, one of the questions in determining a township's crime prevention index is "When you leave do you lock your door?" The answer might be one of the following: "always," "sometimes," "hardly ever," and "never." In this four point continuum, weights of 4, 3, 2, and 1 are assigned. The accumulated points from several answers are then divided by the number of respondents to give the index of that township. For all five indices the directions of weights are from positive to negative. Therefore, a township receives higher points in the index of cooperation with police means the township has a higher degree of cooperation with police.

Statistical Methodology

To understand the relationship between crime rates and 16 community characteristic variables, the multiple regression method is used in the analysis. The multiple regression equation may be written in the following general form.

$$Y = a + b_1 x_1 + b_2 x_2 + \ldots\ldots\ldots + b_{16} x_{16} + e$$

The following variables will be inserted in the regression equation.

The dependent variable:

Y = Crime rate of the township

The independent variables:

X_1 = Population size

X_2 = Percent population change

X_3 = Percent of male population

X_4 = Youth population

X_5 = Education

X_6 = Median income

X_7 = Poverty level

X_8 = Percent of farm occupation

X_9 = Percent of broken homes

X_{10} = Unemployment rate

X_{11} = Residents' perception of safety

X_{12} = Crime prevention

X_{13} = Neighborhood integration

X_{14} = Community satisfaction

X_{15} = Cooperation with police

X_{16} = Distance to the nearest metropolitan center

Empirical Results

Crime Rates in Rural Ohio

Incidents of crime during the period June through November, 1974 in the 9 rural Ohio counties are provided from daily sheriffs' logs kept for this study. According to the sheriffs' reports of the 9 counties, totally there are 7,427 offenses known to the police from June to November, 1974.

In the Uniform Crime Reports, offenses are generally divided into two groups according to the seriousness; namely Part I offenses and Part II offenses. Part I offenses include

criminal homocide, forcible rape, robbery, burglary, aggravated assault, larceny and theft. Part II offenses include vandalism, forgery, assaults other than aggravated ones, and so on. Table 1 presents the total offenses of the 9 counties classified by Part I and Part II offenses. Notice that 71.6% of the crimes are categorized as the Part II offenses, while 28.4% are the Part I offenses.

(Table 1 about here)

As stated previously, offenses in this study are further divided into four groups -- Part I is divided into A and B, and Part II into C and D. Offenses A, B, C, and D represent four different groups of crimes according to the seriousness of the crime. The frequency distribution of these four groups in the 9 counties are shown in Table 2.

(Table 2 about here)

Table 2 indicates that more than one half of the crimes are in Crime C which includes forgery, fraud, embezzlement, drugs and vandalism. The next highest is Crime B which includes burglary, larceny and theft. In order to get a clearer picture of crime types in rural Ohio, Table 3 presents the frequencies of offenses sorted in descending order. Among all the offenses, larceny - theft, vandalism and burglary are the three major crimes in rural Ohio. It is suggested that criminal problems in rural areas are concentrated on crime against property.

(Table 3 about here)

The following section presents a multiple regression analysis which measures the degree of association between each independent variable to crime rate when the effects of other variables have been taken into account.

Multiple Regression Analysis

Step-wise regression analysis was performed and the regression maintained statistically

significant after six variables were entered. These six variables were percent population change, marriage instability, education, poverty, prevention efforts and community satisfaction. Thus, these six variables are considered as relevant variables in explaining the crime rate of the community. The regression results are presented in Table 4. Percent population change, education and poverty are negatively related to the area crime rate with regression coefficients, -0.02, -0.048, -0.13, respectively. Population change measures the percent population change from 1960 to 1970. Education measures the median school years completed by adults, while poverty measures the percent of families of which family income is less than $3,000 per year. Communities with a higher percent population change are associated with a lower crime rate. Communities with higher poverty level experienced a lower crime rate. These findings are contrary to some urban studies. Nevertheless, a community of lower educational level tends to have a higher crime rate. This is consistent with most of the urban studies.

Unstable marriages, preventive efforts and community satisfaction are found positively related to crime rate with regression coefficients, 0.31, 0.32, and 0.41, respectively. A community with more unstable marriages tends to have a higher crime rate which supported the hypothesis postulated previously. Residents of a community showing more preventive activities in daily life and expressing more satisfaction with community services are associated with a higher crime rate in the community. It is difficult to judge whether residents who have spent more efforts in prevention of crime do so because they experience a higher crime rate in the community.

The values of these six variables are all significant at the 10 percent or 20 percent level. Regression coefficients related to the standard measures have been termed "beta" coefficients. The "beta" coefficients are especially useful if we wish to see the relative

importance in affecting or predicting the variation in the crime rate. From Table 4, poverty shows the highest beta weights, while population change comes next. The square of the correlation coefficient, R^2, is an estimate of the proportion of the variance in crime rate that is accounted for by the regression of crime rate on several independent variables. As shown in Table 4, R^2 is 0.08 which means these six variables together only explain 8 percent of variation of community crime rate. It is considered rather low predictability of the independent variables. The low R^2 value reflect randomness. Thus, the crime rate of rural communities is concluded to be marked by a considerable degree of randomness.

(Table 4 about here)

Conclusions

This study which was exploratory in nature represents only a small step in the ecological studies of crime in rural communities. Although crime rate varies somewhat differently among these rural communities, the crime rates are rather random. This finding is contrary to some findings in the urban areas. In the urban areas, criminal and delinquent patterns are highly correlated with the demographic and socio-economic characteristics of the area, as indicated by several ecological studies. However, in this study of rural communities, the crime rate is found to have only a small association with some selected community variables. This indicates that the crime rate will probably be most predictable from other variables which were not studied in this research or the varied crime rates depend on each unique local situation of each community. Furthermore, the difference between this study and some other urban studies probably lies in the definition of the crime rate. The crime rates are generated from the location of the offenses in the research, while most rates are based on the offenders' residence in some urban studies. Although in most of urban studies, there has been a considerable amount of agreement among the various studies as to the

social and demographic characteristics of areas which are most closely associated with crime, the agreement is probably attributed to the fact that correlations have been made with total rates of crime or delinquency based on the offenders' residence. When the crime rates are based on location of offenses, different area characteristics might emerge. Another possible explanation is in the types of crimes which are studied. A weighted crime rate is obtained by first, assigning weights of four, three, two and one to each crime types according to the seriousness of the crime, then summing up the frequencies of all types of offenses. Thus, the crime rate includes all types of crimes, serious and minor ones. Among 7,427 offenses known to the police in the studied townships, only 28.4 percent are classified as Part I offenses and 71.6 percent as Part II offenses. As discussed previously, Part I offenses are more serious offenses, which include criminal homocide, forcible rape, robbery, aggravated assault, burglary, larceny and auto theft. Part II offenses include those of less serious than the above mentioned ones, such as assaults other than aggravated ones, arson, forgery, vandalism and other minor offenses. Due to the large concentration on the crimes in Part II offenses in this study, the crime rate measured probably overrepresents the picture of minor crimes. In further studies, different findings might be obtained if Part I and Part II offenses are measured separately to construct an index of crime rate.

Due to the time and financial limitation, the crime rates of this study were only based on six months data. The units of analysis were limited to nine counties of Ohio. For further study, the data base of crime rate should be expanded on a considerably longer period in order to make certain that the actual criminal pattern of each community is represented. It would be useful to include some urban townships in order to determine the differences between rural and urban communities.

The variables used in this study should be redefined and new ones added. For example, distance to the nearest city center was measured by actual miles from the center of a township to the nearest city center. It could probably be redefined by measuring the level of convenient highway systems to a city. Some other variables could be added to help further explain the crime rate for an area, such as the practices of the criminal justice system, or percent distribution of employment and payrolls. Furthermore, the comparison of several studies at different points in time from the same social setting or from different areas would provide an opportunity for increasing the knowledge about the relationship between crime rate and community characteristics.

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Table 1

Frequency Distribution of Part I and Part II Crimes Known to Sheriffs of 9 Ohio Rural Counties, June 1 to November 30, 1974.

Offense	Frequency	Percentage
Part I	2,105	28.4%
Part II	5,322	71.6%
Total	7,427	100.0%

Table 2

Frequency Distribution of the Four Crime Groups, 9 Ohio Rural Counties, June 1 to November 30, 1974

Offense	Frequency	Percentage
Crime A	174	2.4%
Crime B	1,931	26.0%
Crime C	3,945	53.1%
Crime D	1,377	18.5%
Total	7,427	100.0%

Table 3

Offenses Occurring in Rural Ohio as Reported by 9 Ohio Sheriffs from June through November, 1974

Offense	Frequency	Percentage
Larceny-Theft	2,142	29%
Vandalism	1,417	19%
Burglary and Attempts	1,025	14%
Family Offenses	390	5%
Disorderly Conduct	302	4%
Driving Under the Influence	200	3%
All Other Assaults	140	2%
All Other Offenses	1,811	24%
Total	7,427	100%

Table 4

Regression Results of Crime Rate and Explanatory Variables

Explanatory Variables	Regression Coefficients	t-values	Beta Weights
Population Change (X_1)	-0.02	1.87*	-0.20
Marriage Instability (X_2)	0.31	1.68*	0.17
Education (X_3)	-0.48	1.40**	-0.18
Poverty (X_4)	-0.13	2.54*	-0.31
Prevention Efforts (X_5)	0.32	1.34**	0.14
Community Satisfaction (X_6)	0.41	1.38**	0.14
Constant	2.74	0.44	

R^2 adjusted = 0.08, F ratio = 2.30 (significant at 5%), Number of cases = 93

Regression equation:

$$Y = 2.74 + (-0.02)X_1 + (0.31)X_2 + (-0.48)X_3 + (-0.13)X_4 + (0.32)X_5 + (0.41)X_6 + e$$

* t values are significant at 0.10 level (two-tailed test).

** t values are significant at 0.20 level (two-tailed test).

*** Only 93 out of the 119 samples were used because of the incompleteness of data in 26 townships.

APPENDIX I

Part I and Part II Crimes Defined by the Uniform Crime Report

The Part I offenses are as follows:

1. Criminal homocide.--(a) Murder and nonnegligent manslaughter: all willful felonious homicides as distinguished from deaths caused by negligence. Excludes attempts to kill, assaults to kill, suicides, accidental deaths, or justifiable homocides. Justifiable homocides are limited to: (1) the killing of a person by a peace officer in line of duty; (2) the killing of a person in the act of committing a felony by a private citizen. (b) Manslaughter by negligence: any death which the police investigation established was primarily attributable to gross negligence of some individual other than the victim.

2. Forcible rape.--Rape by force, assault to rape and attempted rape. Excludes statutory offenses (no force used--victim under age of consent).

3. Robbery.--Stealing or taking anything of value from the care, custody, or control of a person by force or violence or by putting in fear, such as strong-arm robbery, stick-ups, armed robbery, assaults to rob, and attempts to rob.

4. Aggravated assault.--Assault with intent to kill or for the purpose of inflicting severe bodily injury by shooting, cutting, stabbing, maiming, poisoning, scalding, or by the use of acids, explosives, or other means. Excludes simple assaults.

5. Burglary.--breaking or entering--Burglary, housebreaking, safecracking, or any breaking or unlawful entry of a structure with the intent to commit a felony or a theft. Includes attempted forcible entry.

6. Larceny.--theft (except auto theft)--(a) Fifty dollars and over in value; (b) under $50 in value. Thefts of bicycles, automobile accessories, shoplifting, pocket-picking, or any stealing of property or article which is not taken by force and violence or by fraud. Excludes embezzlement, "con" games, forgery, worthless checks, etc.

7. Auto theft.--Unlawful taking or stealing of a motor vehicle.

The Part II offenses are:

8. Other assaults.--Assaults which are not of an aggravated nature.

9. Arson.--Willful or malicious burning with or without intent to defraud. Includes attempts.

10. Forgery and counterfeiting.--Making, altering, uttering or possessing, with intent to defraud, anything false which is made to appear true. Includes attempts.

11. Fraud.--Fraudulent conversion and obtaining money or property by false pretenses. Includes bad checks except forgeries and counterfeiting. Also includes larceny by bailee.

12. Embezzlement.--Misappropriation or misapplication of money or property entrusted to one's care, custody, or control.

13. Stolen property; buying, receiving, possessing.--Buying, receiving, and possessing stolen property and attempts.

14. Vandalism.--Willful or malicious destruction, injury, disfigurement, or defacement of property without consent of the owner or person having custody or control.

15. Weapons; carrying, posessing, etc.--All violations of regulations or statutes controlling the carrying, using, possessing, furnishing, and manufacturing of deadly weapons or silencers. Includes attempts.

16. Prostitution and commercialized vice.--Sex offenses of a commercialized nature and attempts, such as prostitution, keeping a bawdy house, procuring or transporting women for immoral purposes.

17. Sex offenses (except forcible rape, prostitution, and commercialized vice).--Statutory rape, offenses against chasity, common decency, morals, and the like. Includes attempts.

18. Narcotic drug laws.--Offenses relating to narcotic drugs, such as unlawful possession, sale, use, growing, manufacturing, and making of narcotic drugs.

19. Gambling.--Promoting, permitting, or engaging in gambling.

20. Offenses against the family and children.--Nonsupport, neglect, desertion, or abuse of family and children.

21. Driving under the influence.--Driving or operating any motor vehicle or common carrier while drunk or under the influence of liquor or narcotics.

22. Liquor laws.--State or local liquor law violations, except "drunkenness" (class 23) and "driving under the influence" (class 21). Excludes Federal violations.

23. Drunkenness.--Drunkenness or intoxication.

24. Disorderly conduct.--Breach of the peace.

25. Vagrancy.--Vagabondage, begging, loitering, etc.

26. All other offenses.--All violations of state or local laws, except classes 1-25 and traffic.

27. Suspicion.--Arrests for no specific offense and released without formal charges being placed.

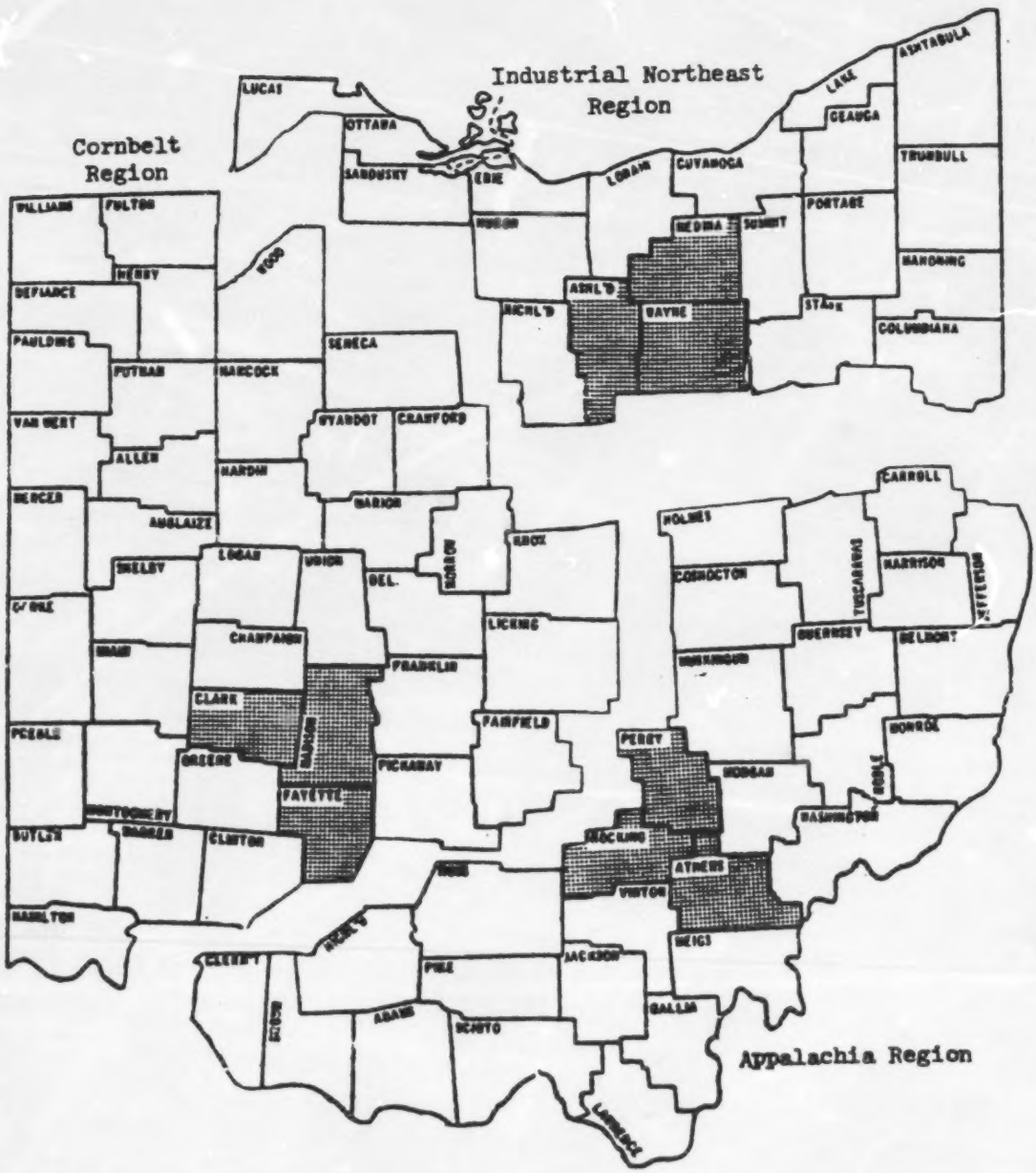
28. Curfew and loitering laws (juveniles).--Offenses relating to violation of local curfew or loitering ordinances where such laws exist.

29. Runaway (juveniles).--Limited to juveniles taken into protective custody under provisions of local statutes as runaways.

(Above sources are from Uniform Crime Report, 1972)

APPENDIX II

Three Geographical Regions of Ohio and Study Counties



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APPENDIX III

Offenses Report Form Prepared for Sheriffs of the Nine Counties

1. Type of offense(s) reported (circle all that apply)

01 Murder and non-negligent manslaughter.
02 Aggravated assault (intent to kill or harm)
03 All other assaults (no grievous damage intended)
04 Forcible rape
05 Assault or attempt to rape
06 Statutory rape (victim under age of consent)
07 Other sex offenses (offenses against chastity, common decency, morals and the like including attempts)
08 Aggravated robbery (use or threat of force in presence of victim to obtain valuables)
09 Assault or attempt to rob
10 Burglary (unlawful entry to commit a felony or theft)
11 Attempted burglary
12 Grand larceny (theft without force of $150 or more in value)
13 Petty larceny (a value of less than $150)
14 Livestock and poultry theft
15 Theft of farm tractors
16 Theft of farm combine
17 Theft of other motorized farm implements (bailers, choppers, etc.)
18 Theft of other nonmotorized farm equipment (rakes, mowers, wagons, etc.)
19 Theft of farm trucks
20 Theft of gasoline
21 Theft of small tools
22 Buying, receiving or possessing stolen property and attempts
23 Auto theft (unlawful taking or stealing)
24 Driving without owners permission (juvenile joy riding)
25 Embezzlement (misuse of money or property entrusted to one's care)
26 Fraud (obtaining money or property by false pretenses; bad checks)
27 Forgery and counterfeiting and attempt
28 Arson and attempts (willful or malicious burning)
29 Abuse of family and children
30 Nonsupport
31 Neglect
32 Desertion
33 Prostitution (commercialized vice)
34 Keeping a house of prostitution
35 Procuring or transporting women for immoral purposes
36 Vandalism (willful or malicious destruction, injury, defacement of property)
37 Mailboxes (destroyed or defaced)
38 Fences and gates (destroyed or defaced)
39 Schools and school property damaged
40 Other property destruction
41 Cemetery damage
42 Dumping refuse in unlawful place
43 Weapons and dangerous ordinances (unlawful carrying, possessing or using including attempts)
44 Drugs: unlawful possession
45 Drugs: unlawful sale
46 Drugs: unlawful use
47 Drugs: unlawful growing or manufacturing
48 Gambling: promoting, permitting or participation
49 Driving under the influence of alcohol or narcotics
50 Public intoxication and/or drunkenness
51 Liquor laws - all other violations
52 Disorderly conduct (breach of the peace)
53 Vagrancy (begging, loitering, etc.)
54 Suspicion (no specific offense and released without formal charges)
55 Curfew and loitering laws (juveniles)
56 Runaway (juveniles)
57 All other offenses (specify offense) _____

(Complete other side of this form.)

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2. DATE AND TIME OF OFFENSE (Circle one for each column)

Month	Date			Day	Time	
					A.M.	P.M.
January	1	12	23	Monday	1:00	1:00
February	2	13	24	Tuesday	2:00	2:00
March	3	14	25	Wednesday	3:00	3:00
April	4	15	26	Thursday	4:00	4:00
May	5	16	27	Friday	5:00	5:00
June	6	17	28	Saturday	6:00	6:00
July	7	18	29	Sunday	7:00	7:00
August	8	19	30		8:00	8:00
September	9	20	31		9:00	9:00
October	10	21			10:00	10:00
November	11	22			11:00	11:00
December					12:00	12:00

3. LOCATION OF OFFENSE: County _____
Township _____
Town _____

4. Was crime committed: (Check all that apply)

_____ On a farm
_____ In a rural nonfarm residential area
_____ In sight of other residences
_____ On a well travelled road
_____ In a town of less than 2,500
_____ In an isolated area
_____ Don't know location
_____ Other (specify) _____

5. Was the crime committed by (___one person) (___2 or more persons) (___unknown)

6. Type of items taken or destroyed _____

7. Estimated value of items taken or destroyed: Actual value if known $_____
More than $50 _____
Less than $50 _____

8. Briefly describe any unusual circumstances (if any).

_____

_____

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